

REMARKS

Claims 1-19 are all the claims pending in the application.

Claims 1, 2, 15 and 17-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jinno et al. (JP5-342918) in view of Tanaka (5,455,383).

Claims 3-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jinno et al. in view of Tanaka as applied to claim 1 above, and further in view of Shibata.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Jinno et al. in view of Tanaka as applied to claim 1 above, and further in view of Lin.

Claims 7-10 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jinno et al. in view of Tanaka as applied to claim 1 above, and further in view of JP10-251606 (JP '606).

Claims 11-13 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jinno et al. in view of Tanaka as applied to claim 1 above, and further in view of Yoshikawa et al.

The Applicants traverse the rejections and request reconsideration.

The instant invention is related to a shield flat cable which employs a thermally or optically curable adhesive comprising a resin having heat resistance and flexibility after curing as a base resin. It is believed to be particularly effective as an application to a shield flat cable having a highly densificated conductor pattern (novelty). Compared with a shield flat cable with a use of an adhesive containing a conventional thermoplastic resin as a main constituent, the inventive novel shield flat cable comprising such an adhesive produces advantageous effects

unattainable through conventional art. Namely, even in a high temperature and high humidity condition a high connection reliability can be ensured.

The shield flat cable as set forth in claim 1 contains an adhesive layer comprising an adhesive with conductive particles dispersed therein, part of the adhesive layer being in contact with a non-covered portion of the ground line for bonding the shielding member to the cable body, wherein the adhesive is a thermally or optically curable adhesive comprising a resin having heat resistance and flexibility after curing as a base resin. By virtue of this characteristic feature of this adhesive, even when the flat cable contains a highly dense conductor pattern, advantages of sufficiently ensuring the reliability of the connection is realized. Such advantages cannot be attained through use of conventional techniques.

In contrast to this, when an adhesive comprises a main constituent of thermoplastic resin such as polyethylene, polyester and polyamid is used, the adhesive strength of such a conventional adhesive is largely lowered comparing with that of the thermally or optically curable adhesive comprising EVA, PVB or unsaturated polyester as base resin as described in the Background section of the present specification.

On the other hand, Jinno arguably discloses a shield flat cable comprising "a conductive adhesive with a carbon fiber dispersed in the molten resin". However, the adhesive comprising this molten resin used by Jinno contains a thermoplastic resin as a base resin as given in paragraph (0008) "for example, polyolefin, diene-styrene copolymerization, etc., into which agent for giving tackiness property, plasticizer antioxidant are combined by the amount at need." Further, the fact that the adhesive used by Jinno comprises thermoplastic resin as its base resin makes Jinno's adhesive quite different from that of the present invention.

In other words, Jinno neither disclose nor suggest the base resin having the property of thermally or optically curable adhesive containing a resin having heat resistance and flexibility after curing as taught by the present invention.

Secondary reference, Tanaka, discloses a conductive adhesive to be used for a shield flat cable as described in paragraph (0010) - (0011) (column 2, line 25-30). It contains, as its prime constituent, a thermoplastic resin such as polyethylene system, polyester system and polyamid system. Therefore, the Applicants respectfully submit that Tanaka too does not suggest the thermally or optically curable adhesive containing a resin having heat resistance and flexibility after curing as its base resin, as required by the present invention.

Thus, the combined teachings of Jinno and Tanaka will not lead one to reach the invention according to claims 1-5, 15 and 17-18. Therefore these claims should be allowed.

Further, the Examiner contends that invention as set forth in claim 6 is obvious over Jinno in view of Tanaka and Lin. However, as the Applicants note in the response dated October 24, 2002, Lin evaluates the polyester unsaturated adhesives and the thermoplastic resin being mutually equivalent with regard to the property which makes those adhesive/resin suitable to be used to a cover tape for packaging. Lin neither disclose nor suggests at all the distinction between the thermally or optically curable adhesive comprising a base resin of "a polyester unsaturated compound soluble in a solvent" as set forth in claim 6 and the resin containing a thermal plastic resin as its main constituent as disclosed by those cited references.

Claims 7-14, 16, 19 depend on claim 1 and are believed to be allowable at least for the same reasons. Further, the conductive adhesive disclosed by Yoshikawa are, for example, epoxy or phenolic resin containing hardener, acrylic adhesive compound, rubber adhesive compound,

silicone adhesive compound and the like with conductive particles dispersed. The adhesives disclosed by Yoshikawa are quite different from the adhesive, namely thermally or optically curable adhesive, as used the present invention. Furthermore, JF10-251606 neither disclose nor suggest the adhesive having the feature of thermally or optically curable resin comprising a base resin having properties of heat resistance and flexibility after curing as taught by the present invention.

In addition, Shibata does not overcome the deficiencies noted in the teachings of Jinni/Lin/Yoshikawa and '606.

Therefore, a skilled artisan would not have been able to make the present invention as set forth in claims 1-19 from the combined teachings of Jinno in view of Tanaka, Lin, Yoshikawa, Shibata and '606.

CONCLUSION

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

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